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# DO RULES BREED RULES? VERTICAL RULE-MAKING CASCADES AT THE SUPRANATIONAL, NATIONAL, AND ORGANIZATIONAL LEVEL

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**ABSTRACT:** *Understanding where (ineffective) organizational rules come from is of vital importance for both public administration scholars and practitioners. Yet little is known about the underlying mechanisms that explain why external rules may cause organizational rule breeding and, as a by-product, red tape. Using a combination of archival and interview data, the authors empirically study rule-breeding processes in the case of Gasunie, which is a heavily regulated Dutch gas transport organization. The archival findings indicate that rule stocks have increased substantially over time at every policy level. Furthermore, the interview data support the notion that policy-makers at different levels are jointly responsible for excessive rule breeding and, ultimately, organizational red tape.*

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## INTRODUCTION

A growing literature on red tape is concerned with understanding ineffective rules (Bozeman and Feeney 2011), but empirical studies mostly ignore the rule sources from which red tape is said to derive (Kaufmann and Feeney 2012; 2014). Indeed, existing theory on formalization as a red tape driver can be condensed into the general assumptions that (1) more rules means more red tape; and (2) government rules and

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regulations are the main source of organizational rules (Brewer et al. 2012; Bozeman 2000; Bozeman and Feeney 2011; Kaufmann and van Witteloostuijn 2012; Bozeman and DeHart-Davis 1999). Despite their intuitive appeal, these assumptions have received little empirical attention (Kaufmann and Feeney 2012; Bozeman 2012).

In this article, we aim to improve our understanding of formalization dynamics by analyzing rule stock changes at the supranational, national, and organizational level. Drawing on the rule ecology literature (van Witteloostuijn 2003; van Witteloostuijn and de Jong 2010; Kaufmann and van Witteloostuijn 2012), we argue that populations of rules are interrelated at different rule-making levels in a hierarchical way. That is, rule making at one level may spur rule production at lower rule-making levels. These rule-breeding processes may be functional in nature, but they may also entail unintended negative consequences (in the current context, red tape). In the organizational ecology literature, this process is referred to as cascade effects (Hannan et al. 2003a; 2003b). Here, we argue that similar vertical cascade effects apply to populations of rules.

Rule-making cascade effects derive from two related processes. First, the implementation of rules itself may require additional rule making. A clear example of such vertical implementation dynamics is the transposition of European directives into national law (Müller et al. 2010). Here, European rules have to be translated into national rules, which is likely to result in an increase of national rule stocks (Kaufmann and van Witteloostuijn 2012). Next, the organizational addressees of these new national rules may have to make changes to their internal rule stocks to comply with the new set of national rules. This dynamic, which is directly related to vertical rule breeding, implies a cascade effect of increasing rule stock sizes that may result in organizational red tape.

Second, each time a rule maker has to implement rules originating from another rule maker, there is a risk of unnecessary embellishments. This process of rule breeding is perhaps again best exemplified in the context of the European Union (EU) through the concept of “gold plating.” Gold plating is said to occur when member states add or change rules in ways that are not necessary for the implementation of European directives, thus resulting in additional requirements and costs (McDonald 2000; Lofstedt 2007). As a result of gold plating, national rule stocks, and associated rule requirements, may increase well beyond the level required for functional policy implementation and create organizational red tape.

We empirically explore our ecological approach in the context of European and Dutch legislation related to gas transmission networks, which is part of the EU’s internal energy policy (Eikeland 2011). Historically, incumbents in the European gas market have been regional or national monopolists (Eberlein 2008). National energy suppliers owned the assets for both producing and transporting natural gas, and were thus able to discriminate “in matters of who should get access to European energy networks and on what terms” (Eikeland 2011, 244). These serious impediments to fair competition and trade have resulted in substantial policy reforms that required national energy suppliers to separate their transmission and production activities (Eberlein 2008). As a result, both national and organizational rule stocks have changed drastically.

In line with Kaufmann and van Witteloostuijn (2012), we first determine the size of the European and Dutch rule stocks in the gas transport policy domain over time. We then count the number of organizational rules for the period 2000–2010 at our case study organization Gasunie, a Dutch organization responsible for the transport of natural gas. These organizational rule counts are compared to growth patterns of the relevant European and national rule stocks. Next, we present the main findings from a set of interviews with Gasunie employees to link our objective rule count data to perceptions of rule breeding, cascade effects, and red tape.

The contribution of this study is threefold. First, we connect the related literatures on formalization, red tape, organizational ecology, organizational rule ecology, and the ecology of law. Second, we provide a detailed quantitative overview of rule stocks at three levels of analysis, namely supranational, national, and organizational. Third, we combine objective rule count data with perceptual measures, thus allowing for a more comprehensive analysis of rule dynamics and red tape.

The structure of this article is as follows. We start by providing a brief discussion of existing research on formalization from the organization sciences and red tape literatures, followed by our rule ecology approach. We then discuss our results, starting with an analysis of the count data, followed by the main findings from our interview sessions. In this section, the study's research design related to the organizational data is described, which includes our rule-counting methods, as well as the interview protocol. The article concludes with a discussion section, emphasizing the avenues for future research that follow from the results and limitations of our study.

In advance, we would like to emphasize that our study is exploratory. To the best of our knowledge, our study is the first of its kind, introducing a new perspective on the dynamics within and among rule stocks at different levels of analysis, from supranational all the way to organizational. This is why we decided to focus on a case that is likely to reveal the kind of processes we are interested in: change cascades, across and within rule stocks. Our case is European and national (here, Dutch) gas law, and how this affects rule dynamics within a gas-related case organization (here, Gasunie). Of course, this implies that we may sacrifice external generalizability in our attempt to maximize internal validity. However, we believe that this is warranted, given the exploratory nature of our novel take on rule dynamics, formalization, and red tape. We return to this issue in the discussion.

## FORMALIZATION AND RULE-BREEDING DYNAMICS

### Formalization in Organization Theory and Red Tape Studies

Only a small number of studies have looked explicitly at supranational, national, and organizational rule stocks (e.g., Schulz 1998; van Witteloostuijn and de Jong 2010), but the related concept of formalization has been studied extensively in the organization theory literature. Formalization can be defined as “the extent to which rules, procedures, instructions and communications are written” (Pugh et al. 1968,

75). Early studies have linked formalization to structural organizational elements such as size, complexity, and centralization (e.g., Hall et al. 1967; Hage and Aiken 1967). Later research has found a wide variety of associations between formalization and organizational outcomes (DeHart-Davis 2009). For example, formalization may reduce work alienation (Organ and Greene 1981; Podsakoff et al. 1986), increase organizational commitment (Michaels et al. 1988), diminish problems of understanding among partners in interorganizational arrangements (Vlaar et al. 2006), and inhibit organizational effectiveness as the organization matures (Walsh and Dewar 1987). Finally, Bozeman and DeHart-Davis (1999) use a case study approach to show how a specific piece of regulation in the US, namely Title V of the 1990 Clean Air Act Amendments, may cause organizational red tape through an overabundance of functional rule objectives, inaccurate rule forecasts, and rapid changes in the regulation's political context.

In the context of the current study, we are particularly interested in formalization *drivers*. Pugh et al. (1969) argue that the organizational context affects organization structure, including formalization. These contextual variables include the organization's origin and history, ownership and control, size, and technology. Kalleberg et al. (1996, 82) focus on institutional sources that capture "the presence of powerful actors having the capacity to mandate, or at least to advocate strongly, the adoption of structural forms," most notably formalization. In support of their argument, the authors find that private organizations are less formalized than public and non-profit ones. Hence, the extant literature provides tentative evidence of organizational rule making in response to external actors.

Distinguishing formalization from red tape has been one of the key challenges facing red tape scholars (Bozeman and Feeney 2011). In early empirical work, formalization and red tape are often confounded (Pandey and Scott 2002). As a result, Bozeman (1993) argued that red tape needs to be carefully disentangled from formalization. Bozeman and Scott (1996) explicitly address the distinction between the two concepts. In their view, formalization is a neutral term that captures how many written rules are in existence, whereas red tape is inherently associated with "bad," or ineffective, rules. This conceptualization of formalization as physiology and red tape as pathology has become the dominant theoretical perspective in the red tape literature.

Formalization and red tape are distinct concepts, but the two are related. Bozeman (2000, 131) argues that "if we think of rules—especially controlling rules—as having an 'underlying probability' of turning into red tape, then more rules will likely mean more red tape." Yet, from an empirical point of view, the relationship between formalization and red tape has remained understudied. Welch and Pandey (2007) study how the implementation of intranet technologies in public organizations may reduce excessive bureaucracy and find that formalization is positively related to red tape. However, since both concepts are measured using self-reported survey data, we do not know if this correlation also extends to objective formalization indicators (Kaufmann and Feeney 2012). Furthermore, the red tape literature mostly ignores the topic of organizational rule stock drivers. This is where our rule ecology approach comes in.

### Organizational Rule Ecology and the Ecology of Law

Organizational ecology research dates back to the late 1970s (Hannan and Freeman 1977), but the first comprehensive study on rule ecology (Schulz 1998) was only published about 15 years ago. Whereas organizational ecology (Hannan and Freeman 1977; 1984) is primarily concerned with how competition and legitimation processes affect rates of organizational birth, growth, and death, rule ecology adapts this theoretical lens to the context of populations of rules (van Witteloostuijn 2003), and applies organizational ecology's empirical toolkit to estimate rule changes, births, and deaths. Specifically, rule ecologists have used the quantitative methods standard in organizational ecology to determine how the opposite theoretical processes of (post-) Weberian rule-breeding and legal learning jointly determine the evolution of written rule stocks (March et al. 2000; van Witteloostuijn and de Jong 2010).

The first rule ecology study of Schulz (1998) examines the production of both academic and administrative organizational rules in a large US research university over time. Overall, these university rule populations grew over time, but at a decreasing rate. In ecological terms, this growth pattern is referred to as a negative density dependence relationship.

Van Witteloostuijn (2003) introduces an ecology of law approach to move beyond the organizational rule level, and to take into account rule dynamics at the national and supranational level. Van Witteloostuijn and de Jong (2008; 2010) empirically test the ecology of law approach, studying the relationship between rule birth events, measured as an increase in the number of sentences involved in the creation of new rules, and rule density in the Dutch higher education domain for the 1960–2004 period. The joint effect of the aforementioned (post-) Weberian rule breeding and legal learning processes results in a reverse U-shaped pattern, which means that at low-density levels (small rule stocks) there are many rule births, whereas at high-density levels (large rule stocks) rule births still occur, but at a decreasing rate.

Kaufmann and van Witteloostuijn (2011) also find support for a reverse U-shaped pattern between European competition rule births and rule density. Surprisingly, the density dependence pattern for rule death, which is hypothesized to be the mirror image of the rule birth pattern, displays the same reverse U-shaped pattern in this setting. The authors argue that this unexpected finding can be attributed to the infrequency of rule death events. Finally, Kaufmann and van Witteloostuijn (2012) explicitly conceptualize supranational and national rules as organizational red tape drivers, and determine the size of the European and Dutch competition rule stocks, as well as the part of the Dutch competition rule stock that explicitly refers to European rules and regulations (which is labeled the Europeanized Dutch rule stock). Their findings show that all rule stocks have drastically increased in size over time, and that much of this increase can be attributed to European legislation.

Although the previously mentioned ecological studies have contributed to our understanding of rule ecology, the focus in existing work has been on within-population, or horizontal, rule dynamics. As a result, the effect of interactions across different levels of analysis (supranational, national, and organizational) remains unclear. This is where organizational ecology's so-called cascade effect comes in.



The concept of change cascades was introduced into organizational ecology by Hannan, Pólos, and Carroll (2003a; 2003b) to further develop structural inertia theory by specifying the subtle mechanisms that drive the higher likelihood of mortality after the implementation of (core) organizational changes. They argue that an organizational change initiative is likely to generate a series of unintended and unexpected change events throughout the organization further down the line: “We concentrate on the possibility that actions in one unit can set off cascades of actions in other units” (Hannan et al. 2003a, 464). In the following, by analogy, we apply a similar cascade logic in the context of rule ecology.

### Rule-Making Cascade Effects

In organizational ecology theory, cascade effects reflect the argument that changes in one part of the organization may also affect other, interdependent parts of the same organization (Hannan et al. 2003a; 2003b). Due to the difficulties of predicting beforehand which interconnected organizational features will be affected by a given change—let alone the final outcomes of such a change—cascade effects entail the risk of an overdose of change to the organization (Levinthal and Posen 2007), which particularly affects the likelihood of organizational failure (Wezel and van Witteloostuijn 2006).

Ecological cascade effects have been studied in a number of empirical settings. Wezel and van Witteloostuijn (2006), for example, study organizational change through product portfolio expansion in the context of the British motorcycle industry for the period from 1895 to 1993. The authors argue that “[t]he likelihood that a change cascade increases the chance of failure depends on the capacity of the firm to ‘digest’ the expansion, whether minor or significant” (Wezel and van Witteloostuijn 2006, 13). One of the main findings of the study is that specific characteristics of firms can moderate the adverse effects of organizational change.

Taking organizational ecology theory as a steppingstone, we argue that cascade dynamics are also at play in rule-making settings. From an ecological perspective, rule-making cascades, whereby the introduction of rules in one area results in the introduction of, or changes to, rules in other areas, occur at every policy level. At the organizational level, March et al. (2000, 2) note that “[t]he density of written rules affects both their mutual autonomy and the possibility of new rules. Changes in one rule can impinge on other rules, creating ripples of rule creation and revision through a system of written rules.” Rule-making cascade effects are pronounced in the area of rule birth and change (van Witteloostuijn and de Jong 2010; Kaufmann and van Witteloostuijn 2012), but do not seem to be so in the domain of rule death, as the latter tends to be a rare event (Kaufmann and van Witteloostuijn 2011). Indeed, many national regulatory reform programs fail substantially, if at all, to reduce rule stocks (de Jong and van Witteloostuijn 2015).

Existing rule ecology studies have mostly looked at the effect of rule density on rule birth events within a single rule population, which may entail horizontal rule-making cascade effects. Here, we focus on rule-making cascades in multi-level settings, which we refer to as a vertical process. A possible explanation for rule makers adding to



existing rule stocks can be found in the literature on policy taxonomy (e.g., Lowi 1972). For example, research has found that regulatory agencies introduce additional rules to fill in broad, and possibly ambiguous, mandates (Meier 1980). In this light, Coglianese (2004, 358) notes that US regulators “have adopted about ten times more rules than Congress has passed laws, even though both have the same binding legal effect on regulated entities.” Similarly, Chun and Rainey (2005a; 2005b) find for a sample of US federal agencies that the “rules to law” ratio is higher for regulatory agencies compared to their non-regulatory counterparts.

Helm (2006, 173) offers a more cynical argument for rule-breeding behavior and posits that “[r]egulatory bodies have a direct incentive to oversupply regulation. Institutions have budgets and missions; their staff have salaries and careers. The former are related to the latter: in general, the bigger the budget, the greater the pay, non-pecuniary benefits, and scope for promotion.” Zeckhauser (1979) points out that using regulation as a distributional tool may result in additional regulation being required. This process is referred to as pyramiding intervention. Specifically, Zeckhauser argues that redistributive regulation often relates to price control, which interferes with the key functions of prices as incentivizing correct behavior and signaling real resource costs. As a result, “we must now regulate because people will neither know what to do nor have appropriate incentives to do so” (Zeckhauser 1979, 18). In the case of rent control, pyramiding intervention implies that building codes need to be imposed to prevent landlords from letting housing quality deteriorate to compensate for lower rental income. Due to these interventions, buildings will be worth considerably less, which means that housing construction must now be subsidized, etc. In any case, functional implementation of mandates, undesirable bureaucratic behavior, and unintended outcomes of regulation are all expected to result in rule stock increases.

In the red tape literature, multi-level rule dynamics are reflected in the so-called external control model of red tape, which reflects red tape that “originates externally but has internal organizational impacts” (Bozeman 1993, 291). In this model, externality is linked to social distance, such as differences in organizational culture or norms. Brewer et al. (2012) put forward three arguments as to why external control increases red tape. First, misapplication of rules is more likely if the number and diversity of stakeholders developing rules increase. Organizations will experience difficulties in exerting precise control over rule implementation if a multitude of stakeholder interests is involved. Such a lack of control may, in turn, create red tape. Second, more distant or highly specialized rule makers will find it harder to communicate with the organization, referred to as “communication entropy.” Third, rule ownership decreases if the rule maker is more distant. As a result, externally imposed rules “are much more likely to be misunderstood, resented, and ultimately undermined” (Brewer et al. 2012, 291) when compared to internally adopted rules.

Based on this, each rule falls somewhere on a spectrum of external-internal control, ranging from entirely internally adopted rules with no external involvement whatsoever to rules imposed by a distant supranational organization with no organizational involvement at all. The literature argues that the higher the level of external control associated with a given rule, the more likely it becomes that this rule will cause red

tape at the organizational level. Clearly, the level of external control increases with each level of policymaking. This logic implies, for example, that supranational rules are more likely to cause red tape than national rules.

Our conceptualization of vertical rule-making cascades can be illustrated by looking at the transposition of European Union directives into national legislation. In a nutshell, directives are only binding with regard to results, and leave member states considerable leeway in terms of forms and methods as to how these results are achieved (Mastenbroek 2003). This, in turn, implies that member states need to either change existing national rules or introduce new rules in order to meet the outcome requirements the directives stipulate. The potential for rule-making cascades as a result of interactions between European and national rules is also mentioned by Kaufmann and van Witteloostuijn (2012) in their study of European and Dutch competition rule stock sizes.

The transposition of directives into national law is often linked to the concept of gold plating, which can be defined as national legislators “adding to, or enhancing, the conditions that are specified in EU legislation” (McDonald 2000, 211). According to the European Commission (2006), member states often implement directives in ways that entail additional costs and burdens, as reflected in the argument that “surveys consistently show that, in the minds of citizens and businessmen, ‘red tape’ is associated with areas of regulation that are not primarily dealt with at European level” (European Commission 2006, 6). The term gold plating is specifically linked to research on European rules, but similar rule-breeding dynamics are likely to apply to other multi-level rule-making settings. As a result, the concept seems particularly relevant for red tape researchers as the introduction of “unnecessary” rules and regulations may well be an important red tape driver.

Integrating these arguments from the rule ecology, European policy, and red tape literatures implies that rule-making cascades are more likely to occur in a multi-level context, which, in turn, will drive organizational red tape. We will empirically explore this claim for the European gas transport domain in the next two sections, focusing on Gasunie as our case organization.

## EUROPEAN AND DUTCH GAS TRANSPORT RULE STOCKS

### A Longitudinal Analysis

In this section, we look at the evolution of rule stock sizes at the European and Dutch level in the gas transport policy domain. This policy domain offers a suitable setting for our ecological rule-making cascade approach, since the domain has undergone substantial policy changes at the European level (Eikeland 2011; Nechvátal et al. 2012), which has also shaped the current Dutch Gas Act. This vertical dynamic of the transposition of European rules into a national Gas Act offers tentative support for a rule-making cascade process. Furthermore, the Dutch gas transport market is heavily regulated through a variety of secondary laws, most notably the so-called Gas Codes, which add another layer of rule making to the regulatory framework.

The arguments in favor of studying the European and Dutch rule dynamics in the gas transport domain notwithstanding, we are aware of the fact that our empirical setting is rather unique. Indeed, we do not argue that the current study is representative of policy dynamics and rule-making cascades in general, as each policy domain (and the organizations operating in that domain) has its own idiosyncrasies and path-dependent evolution. Instead, we introduce our empirical setting as one potential scenario of rule-making cascades, and note that our findings should be compared to other contexts in future research. Basically, as noted in the introduction, our case of gas-related rule dynamics is meant to illustrate the new logic introduced here.

The objective rule counts from this section are used as inputs for our analysis of formalization and red tape at the organizational level at our case study organization in the next section: Gasunie in the Netherlands. But first, we provide a detailed description of our rule-counting procedure (see also van Witteloostuijn and de Jong 2007; 2008; 2010; Kaufmann and van Witteloostuijn 2012).

### **Determining European and Dutch Rule Stock Sizes**

In order to assess the size and evolution of the European and Dutch gas transport policy rule stock, we require an accurate count of all relevant legal rules. Specifically, we are interested in both European regulations (that are directly binding in their entirety) and directives (that are only binding with regard to the specified results). We start by collecting information on all gas-transport-related EU regulations from the online EUR-Lex database's advanced search module, which contains all legal acts that have been published in the Official Journal of the European Union.<sup>1</sup>

In the end, we are left with 36 unique EU gas regulations that deal with gas transport topics, such as Regulations 1775/2005 and 715/2009 on "conditions for access to the natural gas transmission networks." The subject matter of these regulations is market competition in the gas transport domain, which is the focal point of our analysis. Indeed, as we will discuss in the next section, formalization and red tape in our case study organization are strongly affected by this particular rule stock. For each of the 36 sample regulations, we downloaded the English text in rtf format, placed each regulation in a separate Microsoft Word document, and determined the exact number of lines in the main part of the legal text of each regulation using the word-count option (preambles and appendices are excluded from our analysis). All regulations have the same font type (Tahoma) and size (10).

Information on amendments to regulations, which is also provided in the EUR-Lex database, is retrieved to track any subsequent changes to existing regulations, as well as regulation repeals. In order to arrive at rule stock size estimates, we distinguish between three categories of rule dynamics: birth (the introduction of a new rule with no pre-existing link to other regulations); change (amendments to existing regulations; these can result in rule stock increases or decreases, or can have a neutral effect); and death (the repeal of existing rules) (van Witteloostuijn and de Jong 2007; 2010; Kaufmann and van Witteloostuijn 2011; 2012).

In the current study, we are solely interested in the combined effects of rule birth, change, and death events on the total gas transport rule stock. The net change for the

EU rule stock is calculated as the net balance of new rule birth events plus the rule stock increase changes, minus the number of rule deaths and rule stock decrease changes, which is measured in the number of lines of each rule dynamics event. This net balance is then added to the rule stock of the previous time period.

The EUR-Lex database is also used to retrieve the texts of relevant EU directives. During our sample period, only nine gas-transport-related directives have been introduced. However, this rather low number of policy documents does not imply that EU gas directives have been of little importance at the national level. In fact, the current Dutch Gas Act (*Gaswet* in Dutch), which is the foundation of all Dutch gas market regulation, was introduced in 2000 as a means to transpose a specific European directive on common rules for the internal market in natural gas (Directive 98/30/EC). We return to this issue in our discussion of the European and Dutch gas transport rule stocks.

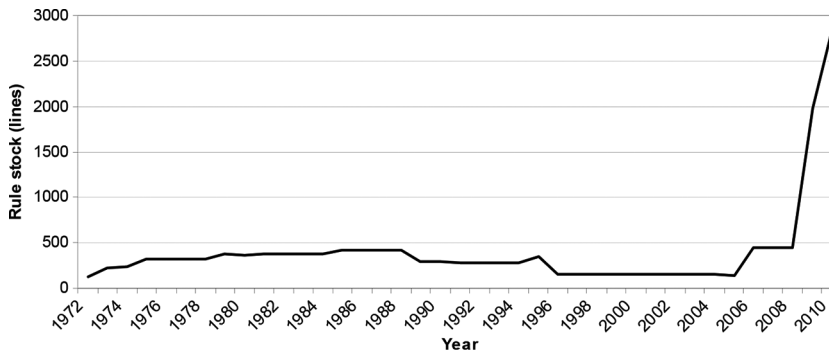
For the Dutch part of our rule stock sample, we use the same approach as outlined earlier. However, the relevant Dutch laws, and their amendments, are identified using the Dutch database Kluwer Plaza. Furthermore, not all relevant legal texts are available online (from the official website [www.wetten.nl](http://www.wetten.nl)); a small number of legal texts were introduced before 1997 and had to be consulted in hard copies of the official journals *Staatsblad* and *Staatscourant*. Finally, in line with Kaufmann and van Witteloostuijn (2012), we make a distinction between Dutch formal laws and “secondary laws” (such as royal decrees). Furthermore, we provide count data on so-called Gas Codes, which are policy documents created by the Dutch energy regulator (Nederlandse Mededingingsautoriteit, or NMa).

A limitation of our rule-counting approach is that our data do not tell us if certain rules are subordinate to others. In fact, the quantitative approach taken here does not allow us to make any inferences about the content of rule stocks. This is a recurring issue in all rule-count studies. In general, it is assumed that impacts of different rules are normally distributed if the sample size is sufficiently large, which mitigates some of these representativeness concerns (Alesina et al. 2005). Furthermore, Kaufmann and van Witteloostuijn (2012) argue that quantitative rule counts should be supplemented with qualitative data for triangulation, which is the approach taken in this study.

### The Evolution of European and Dutch Gas Transport Rule Stocks

The first European regulation related to the gas market entered into force in 1972, as shown in Figure 1.<sup>2</sup>

Up to and including 1981, an additional 15 regulations of limited size were introduced, further increasing the European gas policy rule stock to a total size of roughly 400 lines. The rule stock remained at this level until the mid-1990s, only to decrease in the following years. This finding is indicative of the minor role of energy policy in the EU after the 1950s (Padgett 1992). According to Nechvátal et al. (2012, 2), the “importance of energy policy was neglected throughout the development of the EU and it has come forth again in the nineties and at the beginning of the 21st century.”



**Figure 1.** The evolution of the EU gas transport rule stock.

The first comprehensive attempt at creating an internal energy market resulted in the introduction of two directives related to electricity (1996) and gas (1998), which jointly made up the first internal energy policy package (Eberlein 2008; Eikeland 2011; Nechvátal et al. 2012). In terms of requirements, this package was not very invasive, however, as only “a very few high-volume consumers were granted the right to shift supplier” (Eikeland 2011, 249), and national energy suppliers were still able to discriminate against potential users of their gas transmission networks.

The entry into force of the 1998 gas directive is not reflected in Figure 1, since our measure of European gas transport rules consists solely of legal rules contained in directly binding regulations. Recall, from our earlier discussion, that directives need to be transposed into national legislation and are therefore an intermediate policy document. As a result, the discussion of European gas directives is limited to their effect on national legislation that structures the Dutch gas market.

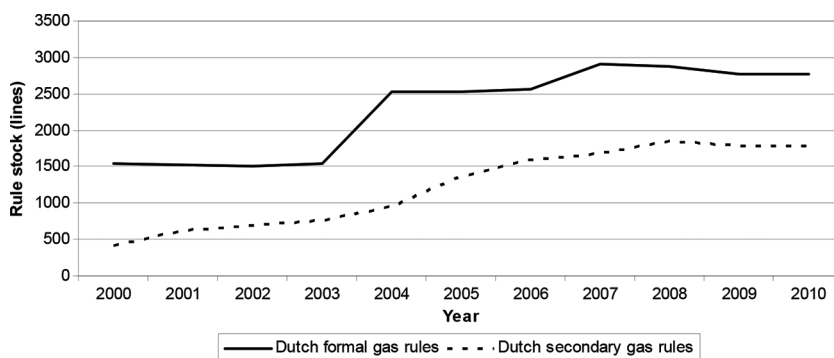
As a result of lagging member-state implementation of the directives from the first energy package (Eikeland 2011), the European Commission decided to initiate a second energy package. This second package entered into force in 2003, and represented a big step towards opening up and integrating national markets (Eberlein 2008). Specifically, the second package *inter alia* included the right to switch suppliers for all consumers. Furthermore, under the second package, the network activities of national energy companies were separated from production and supply activities, through a process called legal unbundling (Eikeland 2011). We return to the issue of unbundling in our discussion of our case study organization. Again, the introduction of directives has no size effect on the European rule stock, as shown in Figure 1. In fact, between 1996 and 2005, the rule stock almost reached the 1972 level again, at just under 150 lines. This noted rule stock size decrease is caused by the repeal of a number of outdated regulations in 1996. Only with the entry into force of the aforementioned Regulation 1775/2005 on conditions for access to the natural gas transmission networks did the rule stock increase again to about 450 lines in 2006.

Despite the introduction of a number of gas market regulations and directives in the first and second packages, vertically integrated incumbents were still perceived

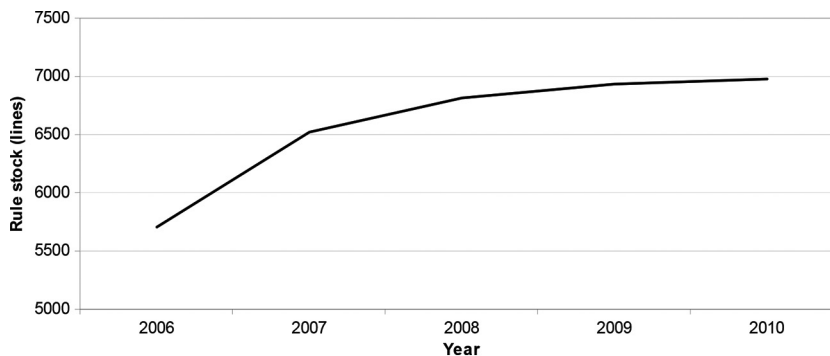
as a barrier to competition in the internal energy market by the European Commission, which resulted in the introduction of a third energy package in 2009 and a sharp increase in rule stock size (Pollitt 2008; Eikeland 2011). The introduction of yet another policy package is indicative of a horizontal rule-making cascade effect; what started out as two directives on electricity and gas liberalization in the 1990s evolved into a third energy package that quadrupled the EU gas rule stock to almost 2,000 lines, a size boosted further by the entry into force of the Security of Supply Regulation in 2010. This drastic increase in rule stock size mirrors the argument by van Witteloostuijn and de Jong (2010, 194) that “[by] introducing a rule, demand for additional rules is boosted as the audience is triggered to ask for more, being made aware of the potential to regulate.”

In addition to the horizontal cascade effects at the EU level, there is also evidence of rule-making cascades at the Dutch level. Essentially, the Dutch gas transport market was unregulated until the year 2000, at which time the Dutch Gas Act (*Gaswet*) entered into force. The Gas Act is an implementation of Directive 98/30/EC, which is part of the first energy package. This is an example of a vertical cascade effect resulting from functional implementation, whereby rules at one level (the EU) require additional rule making at another level (the member state). Size-wise, the entry into force of the Gas Act immediately raised the Dutch rule stock to 1,500 lines, as shown in Figure 2.

In 2004, the Gas Act was amended as a response to another EU directive (Directive 2003/55/EC), which was reflected in a rule-making cascade of additional Gas Act articles and a corresponding rule stock size increase. With regard to Dutch secondary laws, the story is somewhat different. Here, we find a steady rule stock increase from 2001 onward, with a peak of almost 1,900 lines in 2008. In 2009 and 2010, the Dutch secondary rule stock appears to level out at roughly 1,800 lines. As secondary laws are used to implement Dutch formal laws, the impact of European rules is only indirect for this type of rule stock (Kaufmann and van Witteloostuijn 2012).



**Figure 2.** The evolution of the Dutch gas transport rule stocks.



**Figure 3.** The evolution of the Dutch Gas Code rule stock.

Regulation of the Dutch gas transport market is not limited to Dutch formal and secondary laws, however. In fact, the most detailed type of government regulation in the Dutch gas transport domain is the so-called Gas Codes, as shown in Figure 3.

Gas Codes are designed to implement the Dutch Gas Act, and describe the relationship amongst national network administrators, as well as their relationship with other connected members. Unlike formal and secondary laws that are introduced by the Dutch parliament, Gas Codes are created and enforced by the Dutch competition authority, which acts in its capacity as regulator. There are three types of Gas Codes: technical, tariff, and information codes. The level of detail contained in these codes is reflected in its corresponding rule stock size, as shown in Figure 3. Indeed, when compared to Figures 1 and 2, the Gas Codes rule stock size is larger than the combined size of the European, Dutch formal or secondary rule stocks for most of our sample period. Compared to Dutch formal and secondary laws, Gas Codes leave the Dutch regulator a larger degree of freedom to deal with the idiosyncrasies of the Dutch gas transport market. To what extent Gas Codes are dealing with genuine idiosyncrasies or act as a source of gold plating is an empirical matter. We return to this issue in the next section, where we discuss the organizational rule stock at our case study organization.

### **The Evolution of Organizational Formalization at Gasunie**

We now turn our attention to the final stage of rule-making cascades, which is the underlying mechanisms through which external rules cause organizational formalization and red tape. First, we provide a detailed count overview of the organizational rule stock to determine quantitative rule stock evolution, which is in line with our approach for the European and Dutch rule stocks. Next, we use information from a set of interviews to link our objective rule count data to perceptions of rule-making cascades, organizational formalization, and red tape. Jointly, these data sources allow us to identify the rule-making mechanisms that ultimately result in organizational red tape. But, to start with, we briefly introduce our case organization.



### Description of the Case Study Organization

Gasunie, founded in 1963, is a Dutch organization responsible for the transport of natural gas. The annual amount of transported gas through Gasunie's network is equal to roughly 25% of total European gas consumption, making Gasunie an important player in the European gas market. Until 2005, Gasunie had been responsible for both the transportation and selling of natural gas. However, the EU's second energy package required that these types of activities be unbundled into separate organizational entities. Consequently, Gasunie's shareholders (Shell, ExxonMobil, and the Dutch state) opted for creating an independent transmission system operator (ITSO), which means that transmission assets for the transport of natural gas operate entirely independently from the rest of the system (Pollitt 2008). The liberalization of the gas transport market also resulted in the creation of a new organizational entity, called Gas Transport Services. This entity is a wholly owned subsidiary of Gasunie, but is required by law to operate independently. As a result of these institutional changes, there are now a large number of firewalls and compliance procedures within the organization to deal with; for example, non-discriminatory treatment of customers.

The sheer degree of regulatory intensity at the European and Dutch levels, as well as the profound institutional changes derived from this external regulation, make Gasunie an ideal candidate for analyzing the cascade effects of external rules on organizational rules and red tape. Nonetheless, it is important to note that we are dealing with one—very specific—Dutch organization. The fact that Gasunie is both owned and controlled by the Dutch government implies, for example, that there may be unique interactions between political and managerial control objectives. Indeed, it seems likely that the institutional environment within which Gasunie operates will have an effect on the type of (top) managers working for the organization, even if the government is not allowed directly to appoint top managers.

In conclusion, we should be cautious when trying to generalize our findings to other organizations, as rule dynamics are expected to differ not only in distinct policy domains, but also across organizations. Consequently, the following discussion is but one example of rule-making cascades at the organizational level within a specific policy domain. However, we believe that our case organization nicely illustrates our central concept of rule-breeding cascade effects and fits with the exploratory aim of this study. We return to this issue in the conclusion.

### Determining Organizational Rule Stock Size

The organizational formalization data collection procedure has been described in detail in Kaufmann and Feeney (2012). The final sample covers an 11-year period (from 2000 until 2010) and consists of 13,244 documents that were retrieved from the organization's electronic archive DIS. These documents are part of departmental manuals, with three types of documents that are most common: specifications, work instructions, and procedures. Specifications are always of a technical nature, whereas

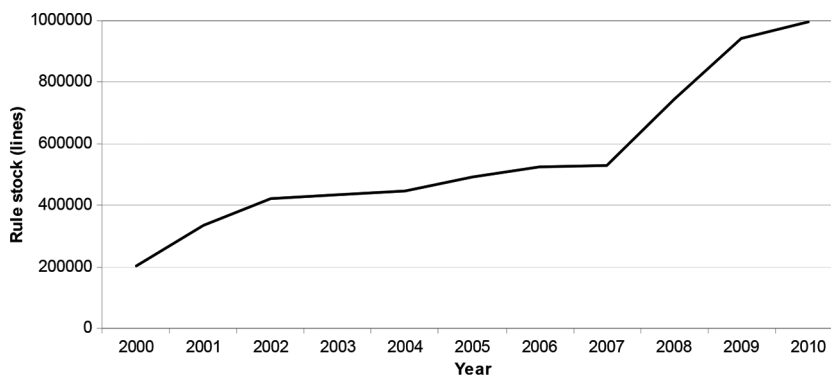
work instructions and procedures can either be technical (i.e., technical engineering) or more administrative (i.e., financial resource management).

Given the sheer size of Gasunie's document stock, we need a few shortcuts to make our count exercise doable. Document size in lines is obtained by multiplying the number of document pages by 30, which is the average number of document lines, obtained from a random sample of 20 documents. Appendix documents, which comprise less than 10% of the total organizational rule stock, are assigned a constant value of 150 lines, based on a random sample of 10 appendices. All rule count data are aggregated into annual observations, the results of which are discussed next.

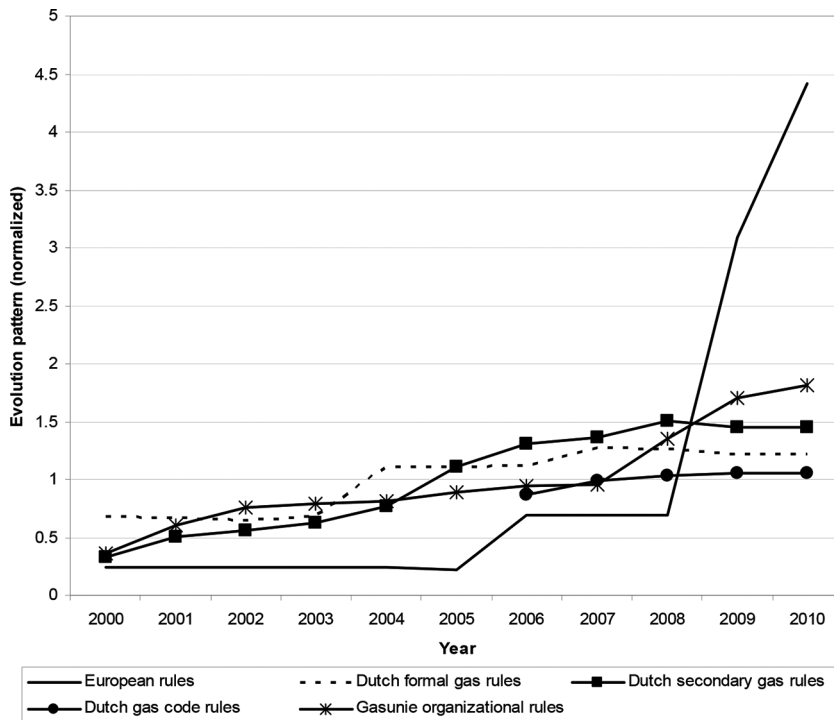
### The Evolution of the Organizational Rule Stock

The evolution of internal rules during the sample period of 2000–2010 is shown in Figure 4.

Two important observations can be made concerning the evolution of organizational formalization from Figure 4. First, the total internal rule stock at Gasunie consisted of almost one million lines (997,470, to be exact) at the end of 2010. Second, the evolution of organizational formalization shows a clear upward trend: between the years 2000 and 2010, the organizational rule stock increased roughly by a factor of five. A straightforward explanation for the strong increase in organizational rules at Gasunie, aside from rule-making cascades, is an increase in organizational size. The number of employees at Gasunie has increased from 1,425 in 2005 to 1,746 in 2010 (plus 22.5%). Given this relatively mild organizational growth rate, it seems unlikely that the growth in the organizational rule stock, which almost doubled during the same time period, is attributable solely to organizational growth.<sup>3</sup> Indeed, the evolutionary pattern of increasing organizational formalization is in line with our findings for the European and Dutch rule stocks, as shown in Figure 5, where absolute rule stock values have been divided by their average value for comparability purposes.



**Figure 4.** The evolution of organizational formalization at Gasunie, 2000–2010.



**Figure 5.** The evolution of European, Dutch, and organizational formalization (normalized).

The rule stock growth patterns at different levels of analysis appear correlated, but it is important to note that vertical rule-making cascades are lagged. Indeed, many EU scholars have found that the transposition of directives into national legislation is often delayed (Mastenbroek 2003; Steunenberg 2006). Similarly, it takes time for organizations to implement European and national rules in their internal rule stocks. As a result, our count data do not tell us everything about the extent and underlying processes of the dynamics between these various rule stocks. The next step, therefore, is to use subjective data from a set of interviews with Gasunie employees to verify the existence of rule-making cascade effects in the gas transport policy domain.

## RULE-MAKING CASCADES: EVIDENCE FROM INTERVIEW DATA

### Data Collection

We started our qualitative analysis by conducting interview sessions in two stages. The first stage consisted of focus group interviews in which the relevant topics and research questions were discussed. Most notably, these focus group interviews were used to determine the organizational units most heavily affected by external rules

derived from the gas transport market liberalization, which are Legal Affairs and Gas Transport Services (GTS). The Legal Affairs department is directly involved in implementing existing legislation, but also plays a role in the development of new legislation through consultations with the relevant legislators in Gasunie's role as Transmission System Operator. The GTS department was actually specifically created in 2004 to implement the unbundling of gas transport and gas sales activities, as required by European and Dutch legislation.

In the second stage, we conducted interviews with 11 employees from these two heavily regulated departments (which resulted in 17 interview hours, in total). The interviewed employees represented a mix of advisors (2), senior advisors (6), and managers (3) who deal with requirements related to European and/or Dutch gas transport rules in their day-to-day activities. The interview process was designed to provide qualitative data with regard to European and national formalization as drivers of organizational formalization and red tape. This purpose was not revealed to the interviewees, though, so as not to bias their responses. Rather, interviewees were told that the purpose of the study was to analyze the evolution of organizational rule stocks within Gasunie.

Interviews were held at Gasunie headquarters, where employees were informed about the general purpose of the study and the confidentiality of the results. Once the employees agreed to the conditions of the interview, they were asked semi-structured, open-ended questions about their role and activities in the organization, perceptions about organizational formalization and red tape, and impressions of European and national formalization on the organization's functioning. The interviewed employees were not informed about the outcomes of our content analyses, so as not to influence their perceptions in any way. After the interview sessions, interviewees were provided with a literal transcription for their approval.

The interview transcriptions were coded in the following way. First, all comments made by interviewees regarding formalization, European, national and organizational rule stock sizes, cascade effects, and red tape were identified and marked. This process resulted in a total of 191 comments. Next, both authors independently categorized the content of each comment in terms of subject matter. Any discrepancies between the two ratings were discussed and amended where needed. This classification of comments was then used to identify more general themes from our interview data related to rule-making cascades. In the end, we are left with four such themes: rule stock increases, bureaucratic behavior, public values, and red tape.

### **Rule Stock Increases and Rule-Making Cascades**

The interviewed employees all share the notion that the size of European, national, and organizational rule stocks has increased drastically over time. As noted by one advisor, when it comes to rule making, "the only way is up." At the top of the chain, each new round of legislation at the European level entails additional rules and requirements both at the national and organizational level. As a result, these European rules have a very large impact on the organization. For example, a manager noted that "there is an increase of European legislation, consisting of very specific and

identifiable topics that need to be implemented in a certain way. All these rules affect the way you run your business. You can imagine how invasive this process is, as these rules determine how you allocate capacity, what your pricing structure looks like, etc.”

In another example, a manager pointed out national rule-making cascades in the context of implementing European rules: “We are not just talking about primary legislation, but also about secondary legislation and the development of [Gas] codes. The lower down you get, the more details you encounter. At some point, one can really question to what extent lower-level legislation is still a direct implementation of European rules.” Similarly, a senior advisor argued that national rule makers take an unnecessarily stringent approach when implementing European rules, thus resulting in even larger national rule stocks. These examples are indicative of gold plating behavior by the national rule makers when implementing European rules.

Two managers noted that internal process and governance rules have increased as a direct result of European and national rules. In this light, a senior advisor pointed out that internal rules have become more elaborate: “especially in those cases where multiple external parties are involved[...], it is important to have a very precise picture of all the internal procedural steps when making a decision. Has the Board of Directors reviewed the case in a specific way? Have the Supervisory Board and shareholder looked at it?”

Although all interviewed employees indicated that external rules are the main driver of internal rule stock increases, the organization itself was, at times, also mentioned as a driver of internal rule creation. Both a manager and senior advisor pointed out that, in the absence of European and national rule makers, part of the internal rule stock would have been created by the organization itself so as to offer clients a greater degree of standardization. Another manager described a sentiment within the organization that “if there are no internal rules that provide certainty [for a specific task], one would rather not perform the task.” In this example, internal demands are driving an increase in organizational rules, rather than external actors.

Overall, then, the interview sessions confirm our quantitative findings that increases in European, Dutch, and organizational rule stocks are responsible for rule-making cascades. From our interview data, we also identified two different arguments as to *why* rule-making cascades occur; namely, bureaucratic behavior and public values.

### **Bureaucratic Behavior**

In total, six interviewed employees posited that rule-making cascades are driven, in part, by bureaucratic rule-breeding behavior. One manager argued that European policymakers can earn their stripes by introducing new legislation: “In some cases policymakers owe their career in the European Commission to having successfully passed new legislation.” As a result, this manager argued that “there is an inherent mechanism at work that will result in a fourth and even a fifth energy package in the future.” Another manager felt that “it takes more courage *not* to make a rule than to make it.”

More generally, three employees reasoned that additional rules and regulations create employment opportunities at the organizational, national, and European level.

A senior advisor speculated that there is no end in sight for rule stock increases, as too many stakeholders benefit from introducing and implementing rules. Similarly, a manager referred to the liberalization of the European gas transport market as one large employment project, while another manager indicated that it is becoming increasingly difficult to dampen rule production as more and more people are making a living by breeding rules.

Interestingly, comments about bureaucratic behavior were all associated with European and national rule makers, as opposed to organizational rule makers. This finding supports Helm's (2006) argument that regulatory agencies have an incentive to oversupply regulation, as both the institutional budget and staff members' careers are, at least to some extent, conditional on policy output. In this view, rule makers must breed rules as their *raison d'être*. Furthermore, these negative employee views on bureaucratic behavior provide tentative support for Bozeman's (1993; 2000) external control model of red tape, which assumes that external rules are more likely to result in organizational red tape than internal rules. We return to this issue later on.

### Public Values and Rule-Making Cascades

In addition to bureaucratic behavior, the interview sessions also indicated that some rule-making cascades are created to safeguard public values; i.e., rules that advance control, accountability, or public security and safety (Bozeman and Feeney 2011). As the relative importance of public values is likely to differ between stakeholders, the perceived validity and effectiveness of rules linked to safeguarding specific public values will also be stakeholder specific. This line of reasoning mirrors the argument by Kaufman (1977, 4) that "one person's red tape may be another's treasured safeguard."

With regard to increases in European and national rules, employees noted that liberalizing the European gas market is a worthwhile objective, in principle. However, five employees explicitly questioned the effectiveness of the methods used to achieve this objective. According to one advisor, continuous change in the complex gas market quickly makes European laws, which can take up to five years to be enacted, obsolete. A manager noted that "regulation was introduced for a specific goal; liberalization. However, over time policymakers have attempted to use regulation to also achieve other objectives. This, in turn, has led to all sorts of side effects that are not clear [to policymakers]." Similarly, a senior advisor emphasized that policymakers do not reflect sufficiently on how the market is currently functioning, and if existing rules could be abolished. In general, the interviewed employees were critical of how European and national rules are used to achieve market liberalization.

At the organizational level, rule-making cascades were, in part, attributed to another public value: concerns about the safety and reliability of gas transport that go beyond externally imposed legal requirements. In this regard, an advisor noted that Gasunie probably has more stringent requirements than its competitors when it comes to safety. The most illustrative example of rules driven by public values

at Gasunie is the safety of gas pipelines. A senior advisor noted that employees are intrinsically motivated to create rules that help ensure the safety of gas pipelines, as “the worst case scenario of a pipeline blowing up [...] would have serious consequences for [Gasunie’s] reputation.”

Another senior advisor noted that the organization is increasingly paying attention to safety concerns in response to national disasters such as the Volendam café fire, which resulted in the death of 14 young people, and the explosion of a fireworks factory in a residential area in Enschede, which killed 23. These *organizational* safety concerns were perceived as valid reasons for rule-making cascades, which again supports the argument that externally imposed rules are more likely to result in red tape (Bozeman 2000). We discuss the relationship between rules and red tape in more detail in the next sub-section.

### Rules and Red Tape

One of the main limitations of the red tape literature is the fact that no definitive measurement of red tape exists (Bozeman 2012; Bozeman and Feeney 2011). Red tape researchers have mostly used the general red tape item put forward by Rainey et al. (1995) to ask survey respondents about the level of red tape in their organization. This red tape measure is hotly debated, however (Feeney 2012; Kaufmann and Feeney 2012). Since we do not know the requirements and burdens associated with the rule stocks from our count data, we need to be cautious in interpreting rule stock increases as equivalent to higher levels of red tape. Still, the interview sessions provide information that is indicative of red tape caused by European, national, and organizational rule stocks.

In total, seven interviewees explicitly associate increasing rule stocks with additional paperwork and/or administrative delay at the organizational level, which are both key features of red tape in the literature (Bozeman and Feeney 2011; Kaufmann and Feeney 2014). For example, a senior advisor noted that, in recent years, gathering and submitting information to the national energy regulator may take multiple employees two or three weeks per request. Similarly, both a senior advisor and manager found that new legislation aimed at speeding up the process of Gasunie getting approval for large investments through a centralized procedure has actually had the opposite effect. Whereas under the old system different procedures related to planning and the environment could be initiated at the same time, the new legislation requires that these procedures are done sequentially. As a result, the entire process may take up to a year longer to complete.

Aside from rule burden and administrative delay, employees also identified a range of other inefficiencies caused by rule surges that hint at the existence of red tape. An overabundance of rules is associated with organizational inflexibility regarding product specification and customer demands (six employees), uncertainty regarding pricing strategies and new investment projects (four), and impediments to the creation of a free market (three). In this light, one manager argued that it is hard for Gasunie managers to take calculated risks, as ever-changing regulation causes uncertainty concerning both products and prices. In general, employees perceive



external rules as a powerful red tape driver, which provides support for Bozeman's (1993; 2000) external control model of red tape.

Finally, perceptions of ineffective rules by Gasunie employees are often linked to perceptions of ineffective rule-makers. Indeed, employees expressed concerns about the level of competence of the national regulatory and control agencies on multiple occasions. For example, a senior advisor notes that "information requests often do not coincide with the way in which data is stored and retrieved here. When we develop a new information system, for example, we are often curious about the outcomes and already start comparing various measures. Then, we get an information request [from the regulator], asking us to compare two somewhat different measures. We had already been keeping track of the original measures for over a year, but in a slightly different way." The senior advisor goes on to note that the original data are unacceptable to the regulator.

In addition, it is not always clear what the regulator intends to do with the requested data in the first place. In this light, another senior advisor provided the following anecdote: "For the last six years we have had to provide a so-called Quality and Capacity Plan [to the regulator] every two years. The Plan needs to show that our systems are of a certain quality, and that our system capacity is also sufficient. At the moment, we are in the process of updating this 50–60 page document, and we received feedback [from the regulator] that this document also needs to include the corporate resources registry. Apparently, the person requesting this addition does not fully realize that if we were to print out this registry here, it would take 20 trucks to transport it to their offices in The Hague."

In conclusion, we find that many of the interviewed employees associate the increasingly complex system of internal and external rules facing Gasunie with inefficiencies and red tape. Hence, the argument that "more rules will likely mean more red tape" (Bozeman 2000, 131) seems to have merit in the context of our rule count study. Especially relevant is the finding that European and national rules are assigned much of the organizational red tape blame. It is important to note, however, that red tape perceptions of the interviewed employees may be biased, and may differ among individuals and stakeholders.

## CONCLUSION

In this article, we put forward an ecological perspective for understanding rule-breeding processes at different policy levels. Essentially, we argue that populations of rules may proliferate via two related processes. First, the implementation of higher-level regulation may require additional rule making at a lower level, as in the case of national implementation of European directives. Second, each rule-making event entails a risk that more new rules are introduced at a lower rule-making level than necessary to meet the higher-level requirements. Jointly, these processes may result in what we refer to as vertical rule breeding, or cascade effects. This vertical perspective should be viewed as an addition to the existing rule ecology literature that focuses on rule dynamics within specific rule populations, or horizontal rule breeding.

We explore our ecological approach in the setting of European gas transport policy. First, we provide a detailed count of the evolution of rule stocks at the European level, and show how European rules spur the introduction of Dutch rules in the same policy domain. Second, we study organizational formalization at the large Dutch gas transport organization Gasunie. Size-wise, the organizational rule stock shows an unambiguous growth pattern, with a fivefold increase in rule stock size during our sample period (2000–2010). This growth pattern is comparable to the evolution of European and Dutch rule stocks in the same domain, providing tentative support for rule-making cascades.

The findings from the objective count data are further supported by subjective information obtained from a set of interviews with Gasunie employees. In a nutshell, the interviewed employees feel that European, national, and organizational rule stocks have all increased drastically over time. Based on the interview data, we identified two main drivers of this rule-breeding behavior. On the one hand, employees felt that rule breeding is an essential tool for European and national policymakers to advance their careers. On the other hand, a number of interviewees indicated that Gasunie itself is also partly responsible for breeding rules to safeguard public values, most notably the safety of gas pipelines. As a result, we find that internal and external pressures jointly determine rule dynamics at our case study organization, and are valued differently by employees.

Our interview data also provide tentative findings regarding the relationship between rules and red tape. First, employees argued that rule stock increases at all levels of analysis have resulted in more paperwork and greater administrative delays. This finding is in line with much existing red tape research. Second, the interviewees identified a range of adverse organizational effects caused by excessive rules and regulations, such as inflexibility regarding customer demands and uncertainty regarding new investment projects. These findings, too, are potential indicators of red tape. Third, we found that perceptions of ineffective rules are often intertwined with perceptions of ineffective rule makers. That is, rules and associated rule burden are sometimes labeled by employees as excessive simply because the rule maker is perceived as ill-informed or incompetent. This additional dimension of red tape has hitherto not been identified in the literature.

The value added of our rules and red tape analysis notwithstanding, we are well aware that there may be alternative red tape drivers that we have not explored in the current study. As one reviewer pointed out, human fallibility responses may lead employees to blame organizational red tape on European and national rules, thus resulting in false attribution. Similarly, our research design does not allow us to take into account the impact of any individual-level demographics or personality traits that may affect red tape perceptions.

Given its explorative nature and associated limitations, we envision a number of extensions of our current research. First, we have focused on one very specific policy domain and a similarly unique case study organization. Given the specificity of our case study, we are cautious in generalizing our findings to other domains and organizations. Future research on rule-making cascades should also take into account other types of organizations and policy domains. Furthermore, a comparative study

on the effects of the same external rules on different organizations could be very worthwhile to develop a deeper understanding of why some organizations are more prone to rule-breeding cascades than others.

Second, more could be done to differentiate the effect of external rule stocks on different parts of an organization. We have limited our analysis of European and Dutch rules to rules and regulations related to market competition in the gas transport domain, and only interviewed Gasunie employees from departments that were most directly influenced by this particular regulatory framework. It stands to reason that some other organizational departments, such as Technical Construction, are affected less by competition rules, and more by rules concerning safety, for example. Although it would be virtually impossible to identify and analyze all external rules and regulations affecting an organization, we are aware of the fact that our conceptualization of external rules is rather narrow, and hence could be improved upon.

Third, another avenue for future research is a more detailed study on gold plating and its relation to red tape. In the current study, we have (tentatively) identified gold-plating behavior by both the Dutch parliament and the Dutch competition authority, as viewed by Gasunie employees. Similarly, we have found that Gasunie itself creates additional rules to ensure the safety of its pipelines, which can be seen as a form of organizational gold plating. Such intricate dynamics are beyond the scope of the current article, but merit further attention.

In the context of our study, we are aware that rule-making cascades may occur without the creation of red tape. For example, the national legislator may need an additional set of rules to shape the implementation of European directives at the national level. Such rule-making cascades can be both necessary and reasonable. As a result, a refined approach is required to explore the pathological elements of rule stocks. Such an approach may include having relevant rule stakeholders rate the red tape contents of specific populations of rules, or certain sub-sets of them. Next, rule changes can be tracked over time; and the same stakeholders can subsequently be asked to indicate the level of red tape associated with the changed rules. Such a longitudinal approach would allow researchers to test for causality, which ties in with recent calls to improve on the conceptualization and measurement of red tape.

## ACKNOWLEDGMENT

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## NOTES

1. European legislation is classified according to so-called directory codes. The most important gas transport policy directory code is 125030, but this is a joint code for both gas- and oil-related regulations. Furthermore, some regulations that have been classified under code 125010 (supplies and stocks) and code 1260000 (other sources of energy) also deal with

gas transport legislation. Consequently, we decided to manually review all oil and gas regulations in order to determine which regulations are relevant for our setting and which are not.

2. Note that the European rule stock deals with market competition in the gas market in general. As a result, the scope of this rule stock is somewhat broader than the rule stock at the Dutch level, which is concerned primarily with gas transport liberalization. However, for clarity's sake, we refer to both types of rules as gas transport rules.

3. Actually, it might rather be the other way around, with formalization leading to growth in the number of employees.

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